



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------------------|------------------|
| 10/519,133 | 03/10/2005 | Bernd Papenfuhs | 3669.1001-000 | 7500 |
| 21005 7590 01/22/2007 HAMILTON, BROOK, SMITH & REYNOLDS, P.C. 530 VIRGINIA ROAD P.O. BOX 9133 CONCORD, MA 01742-9133 | | | EXAMINER BERNSHTEYN, MICHAEL | |
| | | | ART UNIT 1713 | PAPER NUMBER |
| SHORTENED STATUTORY PERIOD OF RESPONSE | | MAIL DATE | DELIVERY MODE | |
| 3 MONTHS | | 01/22/2007 | PAPER | |

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/519,133

Applicant(s)

PAPENFUHS ET AL.

Examiner

Michael Bernshteyn

Art Unit

1713

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 September 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 16-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 16-31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. This Office Action follows a response filed on September 18, 2006. No claims have been amended and cancelled; claim 31 has been added.
2. Claims 16-31 are pending.

Claim Rejections - 35 USC § 102

3. The text of this section of Title 35 U.S.C. not included in this action can be found in a prior Office Action.

Claim Rejections - 35 USC § 103

4. The text of this section of Title 35 U.S.C. not included in this action can be found in a prior Office Action.
5. Claims 16, 20 and 21 are rejected under 35 U.S.C. § 102(b) as being anticipated by Fuss et al. (U. S. Patent 6,808,858), for the rationale recited in § 1 of the Office Action dated on May 15, 2006.
6. Claims 17-19 and 24-25 are rejected under 35 U.S.C. § 102(b) as being anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Fuss et al. (U. S. Patent 6,808,858), for the rationale recited in § 2 of the Office Action dated on May 15, 2006.
7. Claims 22, 23, and 26-30 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Fuss et al. in view of D'Alelio (U. S. Patent 2,332,889), for the rationale recited in § 3 of the Office Action dated on May 15, 2006.

Art Unit: 1713

8. Claim 31 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Fuss et al. (U. S. Patent 6,808,858) in view of Isaksen (U. S. Patent 3,577,374).

With regard to the limitation of claim 31, Fuss discloses that the reaction is preferably carried out at temperatures of from 0 to 90°C (col. 5, lines 10-11). The temperature is determined as a function of the composition of the polymer in the manner known to a person skilled in the art (col. 6, lines 13-15).

Isaksen discloses that the esterification reaction, in detail, may be effected to the desired degree of esterification at temperatures of from 160°C to about 225°C without significant destruction of hydroxyl groups, which is within the claimed range (col. 5, line 28-31, Example 1, col. 7, lines 27-28).

Both references are analogous art because they are from the same field of endeavor concerning new coating compositions based on polyvinyl acetals.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to adjust the temperature of the reaction within the claimed range as taught by Isaksen in Fuss's method for the preparation of polyvinyl acetal with reasonable expectation of success.

It is noted that the temperature of the reaction is a result effective variable, and therefore, it is within the skill of those skilled in the art to find the optimum value of a result effective variable, as per *In re Boesch and Slaney* 205 USPQ 215 (CCPA 1980). See also *Peterson*, 315 F.3d at 1330, 65 USPQ2d at 1382: "The normal desire of scientists or artisans to improve upon what is already generally known provides the

motivation to determine where in a disclosed set of percentage ranges is the optimum combination of percentages."

It is axiomatic that one who performs the steps of a process must necessarily produce all of its advantage. Mere recitation of a newly discovered property or function what is inherently possessed by the things or steps in the prior art does not cause a claim drawn to those things to distinguish over the prior art. Leinoff v. Louis Milona & Sons, Inc. 220 USPQ 845 (CAFC 1984).

Response to Arguments

9. Applicants traverse the above rejection under 35 U.S.C. § 102(b) of claims 16, 20 and 21 as being anticipated by Fuss et al., the rejection under 35 U.S.C. § 103(a) of claims 17-19 and 24-25 2 and 4-6 as being unpatentable over Fuss et al., and the rejection under 35 U.S.C. § 103(a) of claims 22,23 and 26-30 as being unpatentable over Fuss et al. in view of D'Alelio. Applicant's arguments have been fully considered but they are not persuasive.

10. Applicants contend that there is no explicit teaching in Fuss that the disclosed polymer is crosslinked via subunits (1) and (4). Moreover, a polymer crosslinked via groups (1) and (4) would not be obtained if one were to follow the teaching of Fuss (page 8, the last paragraph). Heating is one of the ways of driving the reaction to completion. In fact, Applicants have found that temperatures of at least about 120⁰C are required for the claimed type of crosslinking to occur (as claimed in claim 21). Fuss, however, teaches that his reaction takes place at temperatures from 0 to 90⁰C (col. 5,

Art Unit: 1713

lines 10-11). It follows that esterification of groups (1) and (4) is not inherently disclosed in Fuss. Thus, Fuss does not teach, either expressly or inherently, each and every element of claim 16 (page 9, 1st paragraph).

Applicants further submit that claim 16 is also non-obvious in view of Fuss. Indeed, Fuss fails to teach crosslinking and the methods that would enable one of ordinary skill to make a crosslinked polymer. Furthermore, Fuss invention relates to photosensitive compositions (abstract) (page 9, 3rd paragraph).

11. It is noted that claim 16 of the current application clearly discloses "A crosslinked polyvinyl acetal...", not a process for the preparation of the a crosslinked polyvinyl acetal.

Fuss clearly discloses that it is thus possible to obtain tailor-made polymers, which are suitable for use in photosensitive compositions based on different **photocrosslinking mechanisms** (col. 4, lines 29-31).

Therefore in view of substantially identical structural units of formula (1) and (4) of polymer (A), compound (B) of formula (5), their amounts within the claimed range, a plasticizer, a process for the preparation of the acetal polymers in the presence of catalytic amounts of acid being used by Fuss and the applicant, it is the examiner position to believe that the product, i.e. a crosslinked polyvinyl acetal of Fuss is substantially the same as a crosslinked polyvinyl acetal recited in claim 16, even though obtained by a different process, consult *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

Since the USPTO does not have proper equipment to do the analytical test, the burden is now shifted to the applicant to prove otherwise.

"[E]ven though product-by-process claims are limited by and defined by the process, **determination of patentability is based on the product itself**. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

It is noted that the temperature of the reaction is a result effective variable, and therefore, it is within the skill of those skilled in the art to find the optimum value of a result effective variable, as per *In re Boesch and Slaney* 205 USPQ 215 (CCPA 1980). See also *Peterson*, 315 F.3d at 1330, 65 USPQ2d at 1382: "The normal desire of scientists or artisans to improve upon what is already generally known provides the motivation to determine where in a disclosed set of percentage ranges is the optimum combination of percentages."

12. Applicants contend that the combination of Fuss and D'Alelio would not result in the present invention because neither Fuss nor D'Alelio teaches crosslinking polymers by an esterification reaction between groups (1) and (4) as recited in claim 16. In the present case, D'Alelio teaches crosslinking via nitriles, while the modification of Fuss required to arrive at Applicants' invention is crosslinking via esterification. Because the chemistry involved is different, it is improper to assume that the teaching of D'Alelio is applicable to the polymers of Fuss. Moreover, Applicants' claims require a specific type

Art Unit: 1713

of crosslinking, i.e., direct esterification between groups (1) and (4). Without experimentation, based solely on the teaching of D'Alelio that pertains to crosslinking via nitriles, one of ordinary skill in the art would not know whether crosslinking via esterification of groups (1) and (4) would be successful or would result in a product having the advantageous properties enumerated by Applicants (page 11, the last paragraph).

13. It is noted again that claim 16 is "product-by process" claim, which does not disclose the crosslinking via esterification. Thus, the above statement that "Applicants claims require a specific type of crosslinking, i.e., direct esterification between groups (1) and (4)" contains new subject matter, and should be claimed and considered separately. Therefore, as it is mentioned above, in the absence of showing criticality, it is the examiner position to believe that the product, i.e. a crosslinked polyvinyl acetal of Fuss is substantially the same as a crosslinked polyvinyl acetal recited in claim 16, even though obtained by a different process, consult *In re Thorpe*.

Both references are analogous art and belong to the same field of endeavor concerning carboxyl group-containing acetal polymer compositions and using the final polymers for different applications.

Therefore it would have been obvious to one having ordinary skill in the art when the invention was made to obtain the polymer composition of carboxyl group-containing acetal polymers as taught by Fuss using molding, extruding or injecting at elevated temperatures as taught by D'Alelio in order to obtain molding compounds which can be used to provide a wide variety of industrial products intended for use in areas of

Art Unit: 1713

laminating, coating and adhesive applications, wood flour, paper, cloth, etc. (US'899, page 8, left column, line 60 through page 8, right column, line 35), because such compositions have good adhesive properties and excellent resistance to heat, water and organic solvents, and thus to arrive the subject matter of claims 22-23 and 27-28.

14. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

15. It is worth to mention that Examiner has cited particular columns and line numbers or figures in the references as applied to the claims for the convenience of the applicant. Although the specified citations are representative of the teaching in the art and are applied to the specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant, in preparing the responses, **to fully consider the references in entirety as potentially teaching all or part of the claimed invention**, as well as the context of the passage as taught by the prior art or disclosed by the examiner.

16. In the light of the discussion above, the rejection of record has not been withdrawn. The rejection remains in force.

17. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

Art Unit: 1713

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Bernshteyn whose telephone number is 571-272-2411. The examiner can normally be reached on M-F 8-5:30.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on 571-272-1114. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1713

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Michael Bernshteyn
Patent Examiner
Art unit 1713

MB
01/17/2007


DAVID W. WU
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700